

The National Education Standards "Quilts": A Display Method Aiding Teachers Link NASA Educational Materials to National Education Standards. Becky Knudsen and Art Hammon, Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena CA 91109 (REBECCA.KNUDSEN@jpl.nasa.gov or ahammon@jpl.nasa.gov)

Poster ABSTRACT

Introduction: The National Science Education Standards (NSES) (1) and National Council of Teachers of Mathematics (NCTM) "Principles and Practices for School Mathematics (2)" were produced to meet a growing concern about consistency and comprehensiveness in American Education. They represent a comprehensive and definitive framework for the creation and implementation of K-12 science and math education. The format of the publications is scholarly and well written. To many educators, the publications in their *book form are difficult to use*. A matrix format developed at Jet Propulsion Laboratory places these standards in a format that can be navigated intuitively by teachers seeking to integrate NASA materials into the structure of standards based education.

Description: The Standard "Quilt" is a project of the Educational Affairs Office of Jet Propulsion Laboratory and the Solar System Exploration E/PO Forum. The word "Quilt" implies a display of conceptual and process information which produces unique "squares" produced from the *fabric of content and the thematic organizing of those materials*. The document addresses three needs:

1. Users of curricular materials should be helped to seek them based on the standards being taught and age span of students.
2. Producers of curricular materials should display their materials in ways that show their placement in relation to the standards
3. The display of content standards should be articulated to the thematic way in which they will be presented to students.

The standards "Quilt" displays the standards in three ways:

1. The content subject which is the focus of the curricular material
2. The thematic way in which the presentation of the content is displayed
3. The grade spans used by the NSES are blocked as rows.

In addition, there exist Supplemental Materials which are products but which do not stand alone as curricula. These are being displayed in a similar format called the Supplemental Materials Matrix. They are arranged by planetary body as one organizer and type of media (lithograph, CD-ROM, poster, etc.) as the other organizer.

The creation of this first draft of the NSES "quilt" was placed into CD-ROM electronic format. It is articulated with OSS Solar System Products as of October 2000 and the SSE Product Sampler Office of Space

Science curricular materials. Using email addresses of recipients of the electronic version of the Quilt, several follow up surveys were sent later requesting comments and to determine usefulness of this display.

The selection of CD-ROM format is based on four assumptions:

1. It is effective- no paper products to ship, distribute or be left behind by educators.
2. Since the activities are organized by standards and can be printed as needed and possibly edited, teachers may be more likely to use them.
3. Web version will be available on the Internet in the future.

The results of the follow-up survey of the NSTA quilt recipients indicated a high interest in this product. Eventually a final version will be created that will be comprehensive in scope and involve participation by the entire community in the selection and display of products.

References: [1] *National Science Education Standards*, National Research Council, National Academy Press, Washington DC, 1996 [2] *Principles and Standards for School Mathematics*, National Council of Teachers of Mathematics Inc, Reston, VA, 2000